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EXAMINER

KASHNIKOW, ERIK

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Objections

1. Claim 21 is objected to because of the following informalities: There appears to be a typing error in claim 21, the word “notrogen” appears in the 4th line of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this instant case the claims is rejected over the term “preferably” the inclusion of this term makes it unclear to one of ordinary skill in the art as to what range is being claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramesh et al. (us 5,763,095) in view of Moser (W099/39842 with US 6,746,721 used as a translation) and applicants own disclosure.

6. In regards to claim 22, Examiner is treating it as a product by process claim, specifically regarding the term "deposited by means of plasma polymerization". It has been shown that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113 and *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966).

7. Ramesh et al. teach a multilayer film which can have the layer composition of seal layer/nylon core/abuse layer (page 7 line 19).

8. Ramesh et al. teach that the seal layer be comprised of a polyolefins, preferably ethylene and propylene, which are hydrocarbons (column 6 lines 21-25), and can be made into copolymers with acrylic acid, which is oxygen containing. Ramesh et al. teach that the abuse layer can be a copolymer of ethylene and an acrylic acid (column 6 lines 46-54).

9. In regards to claims 22 and 23 while Ramesh et al. are silent regarding a 1-100 nm thickness of the film layer, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine prior art elements according to known methods to yield predictable results. It has been shown that absent a showing of

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criticality with respect to "thickness" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "thickness" through routine experimentation to values, including those presently claimed in order to achieve "an effective carbon dioxide and oxygen barrier". It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In view of Applicant's own disclosure "plasma chambers with two plasma sources, as are used in their invention are known to persons skilled in the art". One of ordinary skill in the art would recognize that plasma polymerizations offer up thinner polymer layers. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the known method to yield a predictable result, in this case a thinner version of the invention of Ramesh et al. Further Ramesh et al. teach that the nylon polymer forms between 2-40% of the films thickness (column 7 lines 4-11) and seal layers with thickness of about 25% in Example 1.

10. In regards to claim 23 Moser et al. teach that plasma polymerization is specifically used to obtain specific thickness in the nm range (column 3 lines 36-43). One of ordinary skill in the art at the time of the invention would be motivated to have thickness in the nm range for anti-fog effects, scratch protection and printability (column 3 lines 40-44).

11. In regards to claims 24, 25 and 31 Ramesh et al. are silent regarding the nitrogen/carbon ratio of the core layer and the oxygen carbon ratio of the seal layer, however as all materials of Applicant's invention are taught by Ramesh et al. it would be

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obvious, and well within the abilities of one of ordinary skill in the art at the time of the invention to choose a nitrogen containing lower layer that fits within Applicant's range, as well as a material for the upper layer that fits within the range specified by Applicant's, which would inherently lead to a surface tension as claimed by Applicant's.

12. In regards to claim 26 Ramesh et al. teach all the same materials as applicants, and also teach that at least one of the layers is heat sealable (claim 13). Heat sealing is also known as heat welding, and therefore Ramesh et al. teach a combination of materials that is the same as applicants, and also teach the ability to heat weld. Therefore it would be obvious to one of ordinary skill in the art at the time of the invention that the invention of Ramesh et al. would also have the ability to weld to a polar layer.

13. In regards to claims 27-28 Ramesh et al. teach that the films can be used as a food packaging unit to protect against degradation (column 1 lines 25-27).

14. In regards to claim 29 Ramesh et al. teach that additional polymers can be mixed with the nylon layer to form an oxygen barrier (column 5 lines 1-15).

15. Claims 15, 16, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (W099/39842 with US 6,746,721 used as a translation) in view of Chang (US 4,465,738) and applicant's own disclosure.

16. Moser et al. teach a method of coating substrates by polar polymerization (column 1 lines 6-13).

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17. In regards to claims 15 and 18 Moser et al. teach the use of an inorganic gas component, such as oxygen, nitrogen and ammonia (column 3 lines 44-47), as well as the one hydrocarbon compound (column 2 lines 15-25).
18. In regards to claim 16 Moser et al teach a process pressure of 1.6×10^{-2} mbar (column 4 lines 11-12).
19. In regards to claims 20 and 31 Moser et al. teach that aliphatic and/or aromatic hydrocarbon compounds, preferably with functional groups such as amino groups added (column 3 line 45-column 4 line 4).
20. Moser et al. is however silent regarding the two zones of Applicant's invention.
21. Chang teaches a substrate with a multi layer plasma polymerized coating on top of it (column 1 lines 6-15).
22. In regards to claim 15 Chang teaches coating a first layer (or zone) with a hydrocarbon (column 1 lines 50-51) and that the coating for the second layer (zone) contains polar organic compounds, such as acrylic acid, or acryl amine (column 2 lines 27-37). Thus coating a substrate with 2 different zones.
23. In regards to claim 21 Applicant's state in their disclosure that "plasma chambers with two plasma sources, as are used here, are known to persons skilled in the art" (instant application page 7 line 3), and therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use 2 plasma sources to apply the two different layers.
24. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Moser et al. with that of Chang because the method

of Moser et al. which enables stable long term coating (claim 1) to the multilayer producing method of Chang which improves the wettability characteristics of the coated substrate (column 1 lines 6-8).

25. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (W099/39842 with US 6,746,721 used as a translation) in view of Chang (US 4,465,738) as applied to claim 15 above, and further in view of McLaughlin et al. (US 6,638,569).

26. As stated above Moser et al. and Chang teach a process for coating multiple zones of a substrate with different substances. However they are silent regarding the use of an additional silicon containing process gas.

27. McLaughlin et al. teach the addition of silicon based gas (column 3 lines 1-7) to gases that will be used in a plasma polymerization coating process (column 4 lines 1-5).

28. One of ordinary skill in the art at the time of the invention would be motivated to modify the inventions of Moser et al. and Chang with that of McLaughlin et al. because McLaughlin et al. provide thin films with good yields of adhesion and good uniformity to the coated substrates produced by Moser et al. and Chang as discussed above.

29. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (W099/39842 with US 6,746,721 used as a translation) in view of Chang (US 4,465,738) in further view of Badyal et al. (WO98/58117).

30. As stated above Moser et al. and Chang teach a process for using plasma polymerization to form a multilayer coating on a hydrocarbon substrate. However they are silent regarding pressures between 0.1 to 500 mbar.
31. Badyal et al. teach coating of surfaces (page 1 line 3) using plasma polymerization (page 3 lines 31-34).
32. Badyal et al. teach that pressures between 0.1-10 mbar are common pressures used in plasma polymerization.
33. One of ordinary skill in the art at the time of the invention would be motivated to modify the inventions of Moser et al. and Chang with that of Badyal et al. because Badyal et al. adds good oil and water repellant surfaces to the coated surfaces of Moser et al. and Chang as discussed above.

Response to Arguments

34. Applicant's arguments see arguments, filed 07/02/08, with respect to the objection of the abstract and the 35 U.S.C. 112 2nd paragraph rejections have been fully considered and are persuasive. The objection of the abstract and the 35 U.S.C. 112 rejections of the claims have been withdrawn.
35. In regards to Applicant's arguments concerning the thickness of the Ramesh layer, it is noted that applicants argue that it would not have been obvious to one of ordinary skill to provide a thinner version of the invention of Ramesh given that the thickness of Ramesh satisfies a number of conditions for cheese packaging and modifying the thickness could adversely impact the film of Ramesh et al. However, while

Ramesh et al. disclose that the thickness of the film is "preferably" 0.5-5 mils, there is nothing in Ramesh et al. that limits the thickness to this range or excludes using smaller thicknesses. Further, while applicants argue that changing the thickness "could" adversely affect the film of Ramesh et al., applicants provide no evidence to support this position. Further, it is noted that "the arguments of counsel cannot take the place of evidence in the record", *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner's position that the arguments provided by the applicant regarding the thickness of the Ramesh layer must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), "the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001".

36. In regards to the arguments about combining Ramesh and Moser, Examiner again states that the plasma polymerization section of the claims is being treated as a product by process. Examiner, notes that while Moser do not disclose all the features of the present claimed invention, Moser is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references. Applicants argue that since Ramesh et al.

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do not disclose plasma polymerization, it cannot be combined with Moser that discloses plasma polymerization. It is agreed that Ramesh does not disclose plasma polymerization which is why Moser is used. Given the examiner's position that it would have been obvious to control the thickness of Ramesh et al. to values, including those claimed, Moser is used to teach that plasma polymerization would produce films with such thickness.

37. In regards to Applicant's arguments concerning the pressure cited in Moser not falling with Applicant's range in claim 16, Examiner does not see how a pressure that is 10^{-2} mbar does not fall in the range that is from 10^{-3} to 1,000 mbar. Clarification regarding this argument is requested.

38. In regards to applicants arguments regarding Moser and Chang, Examiner points out that Chang does teach first and second zones of different polymer compositions (see paragraph 22 of this office action). Examiner also points out that the layers pointed to in that paragraph are not ceramic layers. It is also noted that while Chang does not disclose all the features of the present claimed invention, Chang is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

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39. In regards to Applicant's arguments concerning the McLaughlin reference Examiner note that while McLaughlin does not disclose all the features of the present claimed invention, McLaughlin is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

40. In regards to Applicant's arguments concerning the Baydal reference Examiner note that while Baydal does not disclose all the features of the present claimed invention, Baydal is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references. Examiner also points out that claim 1 of Baydal teaches "a method of coating a surface with a polymer layer which comprises exposing a surface to

pulsed plasma”, which would mean that the polymer layer is a plasma polymerized layer.

Conclusion

41. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (Second Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Callie E. Shosho/

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